

PROCEEDINGS  
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NEW NORTH AND CENTRAL AMERICAN  
RECORDS OF *ORTHOPORUS*  
(DIPLOPODA: SPIROSTREPTIDA)

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Most of the specimens upon which this paper is based are in my personal collection. The exceptions are noted. I am grateful to the many collectors. Collections for which no collectors are mentioned were made with the assistance of Dr. David Causey.

*Orthoporus boreus* Chamberlin

*Orthoporus boreus* Chamberlin, 1947, Proc. Acad. Nat. Sci. Philadelphia, 99: 55, 57, fig. 69 (Tabor, Snake River Desert, Bingham Co., Idaho. ♀ holotype belongs to the Acad. Nat. Sci. Philadelphia, but is not there; presumably it is in the Chamberlin Coll.).

A curatorial error is suspected in the type locality of this species. I have corresponded with several biologists who have done field work in Bingham County, Idaho, and none can recall having seen large-bodied millipeds there. Bingham, Socorro County, New Mexico, should be investigated as the possible type locality.

*Orthoporus dybasi* (Chamberlin), new combination

*Scaphiostreptus dybasi* Chamberlin, 1952, Great Basin Nat., 12 (1-4): 28-29, fig. 16 (El Fortín, Veracruz. ♂ holotype, Chamberlin Coll.).

Width 5.4 to 7.2 mm. 63 to 67 segments. Annulated with two shades of red-brown; legs are red. Curvature of ectal spine of telocoxite varies; in my specimen from El Fortín, it curves strongly, as in *texicolens*; in the Conejos specimen, the curvature is weaker. All other details of the gonopods from the two sites are identical. Telopodites are in the normal position for the genus, not crossed as in the holotype. Resembles *teapensis* in the general appearance of the gonopods; differs in the stronger sternum and in the presence of a lobe on the telopodite.

*Distribution:* East-central Mexico.

*New records:* VERACRUZ—Veracruz-Jalapa highway, near Conejos, ♂,

♀, immature specimens, 14 June 1954. El Fortín, Posada Loma, ♂, ♀, 17 June 1954.

*Orthoporus flavior* Chamberlin and Mulaik

*Orthoporus flavior* Chamberlin and Mulaik, 1941, J. New York Ent. Soc., 49: 63-64 (4 mi. E of Dryden, Terrell Co., Texas. Immature ♂ holotype, Chamberlin Coll.). Chamberlin, 1943, Proc. Biol. Soc. Wash., 65: 148. Loomis, 1963, J. Kansas Ent. Soc., 36 (2): 123-124, figs. 8-10.

*Orthoporus pontis* Chamberlin, 1947, Proc. Acad. Nat. Sci. Philadelphia, 99-53, 55, fig. 66 ("High Bridge" on Pecos River, Val Verde Co., Texas. ♀ holotype, no. 9977, Acad. Nat. Sci. Philadelphia).

Width 5.1 to 9 mm. 67 to 74 segments. Brown and yellow color phases with identical gonopods are known. The color phases are irregularly distributed over the range of the species and sometimes are in close proximity but have not been found in the same collection. Some populations are intermediate in color. Brown specimens are annulated with lighter brown or greenish brown, and the legs are red. In the brightest specimens, the metazonites are orange, the prozonites and legs are yellow, and the eyes and repugnatorial glands are dark brown. In alcohol, some of the yellow specimens darken slowly and eventually are brown and yellow annulated, resembling some of the lighter-colored specimens of *O. ornatus*.

*Distribution*: Known with certainty from the following west Texas counties: Crockett, Terrell, and Val Verde. Sympatric with *O. ornatus*.

*Old records*: TEXAS—Chamberlin (1943) reported females of the yellow phase from Marathon, Brewster County; Sierra Blanca, Hudspeth County; and 10 mi. E of Dryden, Terrell County. Loomis (1963) reported collections containing males from 3.3 mi. W of Sanderson, Terrell County, and Devil's River Bridge, U. S. Highway 90, Val Verde County.

*New records of the brown color phase*: Crockett Co.: Lancaster Hill, ♂, 21 Aug. 1959, W. H. McAlister. Terrell Co.: about 10 mi. N of Dryden on the Bendele Ranch, 3 ♂, 2 ♀, June 1963, James Reddell. Val Verde Co.: below dam of Lake Walk, Devil's River, 9 Aug. 1963, 5 ♂, 18 ♀, M. S. Mooney.

*New records of the yellow color phase*: Val Verde Co.: Devil's River Bridge, U. S. Highway 90, 2 ♀, 8 Oct. 1958, H. V. Weems, Jr. (Fla. Dept. Agr.). Canyon of Pecos River near junction with Río Grande, ♀ and many larvae, "apparently feeding on sphagnum moss," 14 April 1960, R. W. Strandtmann. 20 mi. E of Comstock, Bob Williams Ranch, 2 ♀, 30 Sept. 1963, J. Reddell. Osman Canyon, S of Langtry, ♂, 25 Jan. 1964, J. Reddell.

*Orthoporus fraternus* (Saussure)

*Jules fraternus* Saussure, 1860, Mem. Soc. Phys. Geneve, 15: 374, pl. 6,

fig. 40 (Yautepec, Morelos. Location of ♀ holotype is unknown.).

? *Spirostreptus fraternus*, Saussure and Humbert, 1872, Miss. Sci. Mex., Myr., p. 70.

*Orthoporus fraternus*, Pocock, 1909, Diplopoda, in Biol. Centr.-Amer., p. 101.

*Orthoporus amulensis* (? *Spirostreptus fraterus*) Pocock, 1909, Diplopoda, in Biol. Centr.-Amer., p. 98, pl. 8, fig. 5 (Amula, Guerrero. NEW SYNONYMY.

*Orthoporus morelus* Chamberlin, 1943, Bull. Univ. Utah, biol. ser., 8 (3): 16, figs. 16, 17 (Tepoztlan, Morelos. ♀ holotype, Chamberlin Coll.) NEW SYNONYMY.

Width 3 to 5 mm. 68 to 79 segments. In alcohol, color varies between dark red-brown and brown annulated with yellow; venter is lighter than dorsum. I have examined topotypes of *fraternus* and *morelus*. Pocock's figure lacks the femoral spine that is on the telopodite of the gonopod but agrees otherwise with my specimens.

*Distribution*: South-central Mexico.

*New records*: MORELOS—8 mi. E of Yautepec, under cattle droppings, ♂, ♀, immature specimens, 20 June 1957. Near Amacuzac, ♂, ♀, 27 June 1957. VERACRUZ—Between Jalapa and Banderilla, km. 327, ♂, ♀, 24 June 1957. OACACA—Oacaca, under cattle droppings and rocks, very dry, 3 ♂, ♀, 24 June 1955. PUEBLA—Highway 190, km. 275, near Tehuiztingo, under cattle droppings. ♂, 3 ♀, many immature specimens, 20 June 1955.

#### *Orthoporus ornatus* (Girard)

*Julus ornatus* Girard, 1853, in Marcy, Exploration of the Red River of Louisiana . . . in 1852, Appendix F, p. 274; "collected on the 27th of June." Type locality restricted by Causey (1954) to Palo Duro Canyon St. Pk., Randall Co., Texas. Holotype, of undetermined sex, is probably lost.

*Spiroبولus ornatus*, Wood, 1865, Trans. Amer. Philos. Soc., 13: 208.

*Spirostreptus montezumae*, Bollman, 1888, Proc. U. S. Nat. Mus., 11: 343.

*Orthoporus punctilliger* Chamberlin, 1923, Proc. Calif. Acad. Sci., 12: 405, 407, fig. 41 (San Pedro Bay, Sonora. ♂ holotype, Calif. Acad. Sci.). Loomis, 1963, J. Kansas Ent. Soc., 36 (2): 124-125. NEW SYNONYMY.

*Orthoporus wichitanus* Chamberlin, 1931, Ent. News, 42: 99, pl. 2, fig. 2 (Elk Mt., Wichita Reserve, Comanche Co., Oklahoma. ♂ holotype, Chamberlin Coll.). NEW SYNONYMY.

*Orthoporus vallicolens* Chamberlin, 1943, Proc. Biol. Soc. Wash., 56: 149, fig. 15 (Ft. Hancock, Hudspeth Co., Texas. ♀ holotype, Chamberlin Coll.).

*Orthoporus arizonicus* Loomis, 1953, J. Wash. Acad. Sci., 43 (12): 418,

figs. 4, 5 (Patagonia, Santa Cruz Co., Arizona. ♂ holotype, U. S. Nat. Mus.).

*Orthoporus ornatus*, Causey, 1954, *Tulane Studies in Zool.*, 2 (4): 67, fig. 10.

Loomis (1963) called attention to the variations in the somatic characters and the wide distribution of this species. Width 5 to 11 mm. 63 to 73 segments. Body is usually medium brown annulated either conspicuously or inconspicuously with a lighter shade of brown. Specimens from Big Bend National Park and Chihuahua are annulated with yellow and resemble *flavior*. The gonopods vary slightly as to the shape of the mesiodistal angle of the lateral lamella, the length, thickness, color, and direction of the ectal spine of the telocoxite, and the length of the femoral spine of the telopodite. The mesiodistal angle of the lateral lamella, anterior view, is usually a right angle, but in the northern part of the range it is narrowly rounded, and in the south and west it tends to be acute and prolonged, but never as much as in *texicolens*.

The figure of the gonopods of *punctilliger* is adequate for placing that species in synonymy with *ornatus*. I have examined a male topotype of *wichitanus* and males from sites within 75 and 100 miles of the type locality of *ornatus*. Males of no other spirostreptids have been collected in north Texas and Oklahoma. Several species that were described from sites in Arizona, New Mexico, and northern Mexico are suspected of being synonymous with *ornatus*. Among them is *Spirobolus miles* Chamberlin, 1918 (*Pomona Coll. J. Ent. and Zool.*, 10: 11); the type locality is Fort Grant (not Fort Boutelle, as stated in the original description), Graham County, Arizona. Males of no species except *ornatus* have been collected in Arizona, New Mexico, and northwestern Mexico.

*Distribution*: The southwestern United States and northern Mexico. The periphery of the range passes through Arizona, New Mexico, northwestern Texas, southwestern Oklahoma, southwestern Texas, Nuevo Leon, San Luis Potosí, Chihuahua, and Sonora. In west Texas, *ornatus* is sympatric with *flavior*. The eastern periphery of the range partially overlaps the range of *texicolens*, which occupies the Gulf Coastal Plain of south Texas and northern Mexico.

*Old records*: ARIZONA—Pinal Co.: Sacaton, ♂, ♀. TEXAS—El Paso Co.: near El Paso, ♂. Uvalde Co.: between Camp Wood and Uvalde, ♂, ♀. Brewster Co.: Panther Junction, Big Bend National Park, ♂, ♀ (Loomis, 1963).

*New records*: ARIZONA—Yuma Co.: Tule Mts., Buckhorn Tanks, ♂, 30 Sept. 1956, V. Roth. Graham Co.: 65 mi. N of Willcox, ♂, ♀, 18 July 1956, W. Gertsch and V. Roth (AMNH). OKLAHOMA—Comanche Co.: Wichita Reserve, ♀, 16 June 1932 (*Zool. Mus., Univ. Okla.*); ♀, June 1963, D. Jackson. Greer Co.: Quartz Mts., ♂, 2 ♀, H. P. Brown (*Zool. Mus., Univ. Okla.*). TEXAS—Baylor Co.: Seymour, ♂, ♀, 15 Nov. 1960, A. H. Kemp. Crockett Co.: Amaker Ranch, N of Iraan across Pecos River, ♂, June 1963, J. Reddell. Brewster Co.: Big Bend Nat. Pk.,

Dagger Flat, ♂, 22 Aug. 1959, W. H. McAlister; Tortilla Flat, ♂, 3 ♀, 12 May 1959, E. C. Becker (Ottawa Dept. Agr. Ent.). Childress Co.: Childress, ♂, ♀, 15 July 1961, R. Brandon. Dimmit Co.: 3 mi. SW of Carrizo Springs, many ♂ and ♀, 10 Aug. 1958, R. H. Pluenneke. Culberson Co.: Drake Ranch, 7 mi. N of Kent, ♂, June 1963, J. Reddell. Hardeman Co.: 3 mi. W of Quanah, larvae, 25 April 1954; 2 mi. E of Quanah, ♀, 6 Aug. 1953. King Co.: 2 mi. E of Guthrie, larvae, 20 Aug. 1953, O. Sanders. Lubbock Co.: Lubbock, ♂, ♀, larvae, R. W. Strandthmann. Randall Co.: Palo Duro Canyon St. Pk., ♀, larvae, 27 May 1956, N. Causey; ♀, July 1961, J. Frank. Val Verde Co.: Del Rio airport, many ♂ and ♀ crawlings on surface, 11 June 1962, R. O. Albert. CHIHUAHUA—5 mi. W of Jiménez, 4,550 ft. alt., ♂, ♀, 16 July 1957. 8 mi. E of Villa Ahumada, 4,000 ft. alt., ♂, 7 July 1957. Near Samalayuca, many ♂ and ♀, 6 July 1957. 8 mi. E of Los Lamentos, many ♂ and ♀, 8 July 1957. All Chihuahua collections by S. Anderson (Univ. Kan. Mus. Nat. Hist.). SAN LUIS POTOSÍ—Near Huizache, swarming in great numbers, ♂, ♀, 8 June 1955. TAMAULIPAS—5 mi. W of Palmillas, ♂, ♀, 3 June 1959, R. O. Albert. NUEVO LEON—On and near Candela Peak, Coahuila-Nuevo Leon boundary, 4 ♂, 2 ♀, 13 July 1963, B. Russell.

*Orthoporus striatulus* Pocock

*Orthoporus striatulus* Pocock, 1909, Diplopoda, in Biol. Centr.-Amer., p. 99, pl. 8, fig. 1 (Tuxtla, Mexico). Width 3.3 to 4.2 mm. 59 to 71 segments.

*Orthoporus chiapasus* (Chamberlin, 1943, Bull. Univ. Utah, biol. ser., 8 (3): 12-13, fig. 4), which was described from a female from Huixtla, Chiapas, is suspected of being a synonym of *striatulus*.

Pocock did not indicate which one of the several places in Mexico named Tuxtla is the type locality of this species. The records indicate that it is surely Tuxtla-Gutiérrez, also known as Tuxtla Chico, Chiapas. I have not seen *striatulus* in any collections from the Tuxtlas in Veracruz.

*Distribution:* Southern Mexico.

*New records:* CHIAPAS—Tuxtla-Gutiérrez, Zoological Garden, 27 June 1955, many immature specimens. Vicinity of Tuxtla-Gutiérrez, many mature specimens, 1955, M. Álvarez del Toro. Pan-American Highway, 31 mi. NW of Tuxtla-Gutiérrez, 28 June 1955, immature specimens. OAXACA—Pan-American Highway near Chiapas-Oaxaca boundary, under logs in farmyard, 27 June 1955, ♂, ♀, immature specimens. TABASCO—Jalapa, west bank of Río de Sierra, 28 Dec. 1963, ♂, ♀, L. D. Ober. Collections of females and immature specimens that have the facies of *striatulus*. CHIAPAS—San Jerónimo, near Tapachula, 2000 ft. alt., ♀, 5 mm., 64 seg., 25 July 1963, Moll and Landry. OAXACA—Tehuantepec, many immature specimens in banana plantation, 27 June 1955.

*Orthoporus teapensis* Pocock

*Orthoporus teapensis* Pocock, 1909, Diplopoda, in Biol. Centr.-Amer.,

pp. 97-98, pl. 8, fig. 4 (Teapa, Tabasco. ♂ holotype, Brit. Mus.).

Width 3.2 to 6 mm. 57 to 73 segments. In alcohol yellow-brown annulated with yellow; legs are yellow-brown.

*Distribution*: Southern Mexico.

*New records*: CHIAPAS—Tuxtla-Gutiérrez, Zoological Garden, 2 ♂, many immature specimens, 28 June 1955. Vicinity of Tuxtla-Gutiérrez, many mature specimens, 1955, M. Álvarez del Toro. OAXACA—Pan-American Highway near Chiapas-Oaxaca boundary, under logs in yard, 3 ♂, 6 ♀, 27 June 1955. Tehuantepec, under debris in banana plantation, 2 ♂, 2 ♀, 27 June 1955.

Females suspected of being this species were collected at San Jerónimo, near Tapachula, Chiapas, 2200 ft. alt., 18 July 1963, Moll and Landry (Ill. Biol. Sur.).

#### *Orthoporus texicolens* Chamberlin

*Orthoporus texicolens* Chamberlin, 1938, Proc. Biol. Soc. Wash., 51: 207 (Edinburg, Hidalgo Co., Texas. ♂ holotype, Chamberlin Coll.). Loomis, 1963, J. Kansas Ent. Soc., 36 (2): 126, fig. 18.

*Scaphiostreptus texicolens*, Chamberlin, 1952, Great Basin Nat., 12 (1-4): 28.

*Orthoporus victorianus* Chamberlin, 1943, Bull. Univ. Utah, biol. ser. 8 (3): 18, pl. 2, figs. 20-22 (3 mi. S of Victoria, Tamaulipas. ♂ holotype, Chamberlin Coll.). NEW SYNONYMY.

Width 6 to 9 mm.; 67 to 79 segments. Body color is brown annulated with dark red. Details of the exoskeleton are as in the congeners with contiguous ranges. There are no significant variations in the gonopods.

The drawing of the gonopod of *victorianus* is adequate for synonymizing it with *texicolens*. I have not examined the holotype.

*Distribution*: The West Gulf Coastal Plain from the Guadalupe River of Texas to the Tropic of Cancer. The western periphery of the range passes through Uvalde County, Texas, and Victoria, Tamaulipas, and is contiguous with the range of *ornatus*.

*Old records*: TEXAS—Bexar Co.: Helotes, ♀ (Chamberlin, 1943). Cameron Co.: Brownsville, ♂ (Chamberlin, 1953). Hidalgo Co.: Hidalgo, ♂ (Loomis, 1963). TAMAULIPAS—5 mi. W of El Forlón, 5 ♀ (Chamberlin, 1943).

*New records*: TEXAS—Cameron Co.: Brownsville, ♂, ♀, 20 May 1959, Bill Butt. Jim Wells Co.: Alice, ♀, 1 Aug. 1961, "many moving at night; no rain, no weather change;" 3 ♂, many ♀, larvae, 4 May 1962, R. O. Albert. Karnes Co.: Falls City, "walking in daylight," 2 ♂, 6 ♀, larvae, 27 June 1961, J. F. Quinlan, Jr. San Patricio Co.: Lake Corpus Christi, ♂, 10 June 1962, R. O. Albert. La Quinta Beach, 5 mi. E of Portland, fragment, R. O. Albert. Uvalde Co.: Pablo's Cave, 2 ♂, 8 ♀, larvae, 5 April 1963, J. Reddell. Victoria Co.: 11 mi. S of Victoria, ♀, June, 1963, R. O. Albert. Wilson Co.: 4 mi. SE of Poth, "24 hours

after a heavy rain following a long drought; out in daytime," 5 ♂, 2 ♀, many larvae, 16 June 1961, J. F. Quinlan, Jr.

*Records of undetermined collections of the Spirostreptidae:* ARIZONA—Yavapai Co.: southern part of county, ♀, 23 Aug. 1962, J. F. Quinlan, Jr. NEW MEXICO—Bernalillo Co.: near Río Puerco, W of Albuquerque, 5,600 ft. alt., ♀ and larvae, 23 July 1954, C. C. Hoff (Amer. Mus. Nat. Hist.). San Miguel Co.: north bank of Perro arm of Conchas Lake, ♀, 29 July 1959, D. B. Jester. Valencia Co.: ½ mi. S of pumice mine, near Grants, 7,200 ft. alt., ♀, 23 July 1953. 1 mi. E of Correo, 18 July 1953, C. C. Hoff (Amer. Mus. Nat. Hist.). DURANGO—5 mi. and 21 mi. SW of Torreón, 2 ♀, width 7–9 mm, 70–75 segments, 4 June 1955. HIDALGO—Jacala, in garden of hotel, ♀, width 5 mm, 75 segments, black-brown strongly annulated with yellow, 23 June 1954. MORELOS—Near Amacuzac, Highway 95, km. 134, ♀, inconspicuously annulated, width 6.2 mm, 62 segments, 27 June 1957. NUEVO LEÓN—Monterrey, 2 ♀, 15 April 1963, R. O. Albert. SAN LUIS POTOSÍ—30 km. S of Valles, ♀, width 6 mm, 77 segments, brown, 25 June 1954. SONORA—Hermosillo, ♀, width 8.5 mm, 70 segments, 4 Aug. 1959, L. W. Nichols. VERACRUZ—2 mi. E of Catemaco, 1100 ft. alt., ♀, width 6.5 mm, 48 segments, 21 July 1963, G. Ross (Zool. Mus., La. St. Univ.).